UNITED STATES ENVIRONMENTAL
PROTECTION AGENCY
REGION II

IN THE MATTER OF	BATAVIA ADMINISTRATIVE ORDER
NL INDUSTRIES, INC. Respondent,	Index No. CERCLA-40201
Proceeding Under Section 106(a) of the Comprehensive Environmental Response, Compensation and Liability Act (42 U.S.C. §9606(a))	

JURISDICTION

The following Administrative Order on Consent ("ORDER") is entered into with NL Industries, Inc. (Respondent) pursuant to the authority vested in the President of the United States by Section 106(a) of the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), 42 U.S.C. §9606(a), which authority was delegated to the Administrator of the United States Environmental Protection Agency (EPA) by Executive Order 12316, August 20, 1981, 46 Fed. Reg. 42237, and redelegated to the Regional Administrator, Region II. Pursuant to Section 106 (a) of CERCLA, 42 U.S.C. §9606(a) the State of New York has previously been notified of this ORDER.

SUMMARY OF INFORMATION RECEIVED BY ADMINISTRATOR

1. The Respondent is a person as defined in Section 101 (21) of CERCLA, 42 U.S.C. §6901(21) and is or was an owner/operator and/or generator of hazardous substances, and is a responsible party under Section 107(a)(3) of CERCLA, 42 U.S.C. §6907(a)(3).

2. The Batavia Landfill ("the site") is an active municipal landfill located west of Kelsey Road and North of the New York State Thruway in Batavia, New York and includes all that tract or parcel of land situated in the Town of Batavia, County of Genesee and State of New York, being lot 2, and part of lot 4,

section 11, Township 12, Range 2, Holland purchase. The site has been owned by the Town of Batavia and operated by both the City and Town of Batavia since December, 1967. Industrial waste disposal has occurred from the mid-1950's until February, 1980.

3. NL Industries, Inc. is a person who by contract, agreement, or otherwise arranged for disposal, or arranged with a transporter for transport for disposal, of hazardous substances owned or possessed by NL Industries, Inc., the threatened release of which, from the Town of Batavia Landfill, may be an imminent and substantial endangerment to the public health, welfare or the environment.

4. Industrial wastes known to have been disposed of at the site include but are not limited to: chromium hydroxide sludge, magnesium sludges and sweepings containing barium, inks, spent solvents, and oils.

5. Personnel from the EPA and New York State Department of Environmental Conservation (NYSDEC) have conducted investigations of the site on May 18, 1982 and May 24, 1983, which included a review of pertinent background information and a reconnaissance inspection with a field survey.

6. The active portion of the site, presently used for the disposal of municipal wastes from the Town and City of Batavia, is confined to the eastern half of the site. The western half of the site, suspected by EPA, of containing the preponderance of industrial waste is, for the most part, inactive.

7. On January 4, 1983 SCA Services, Inc. excavated and removed 38 drums from the Batavia Landfill site. Analytical results from the sampling of these drums revealed the presence of hazardous substances including benzene, toluene, ethyl benzene, chromium, cadmium and arsenic, which are "hazardous substances" within the meaning of Section 101(14) of CERCLA, 42 U.S.C. §9601.

8. In December 1982, Fred C. Hart Associates conducted a groundwater sampling survey in the area of the Batavia Landfill. Sampling data from three on-site monitoring wells, installed by Dunn Geoscience in March, 1980 for the NYSDEC, revealed the presence of chloroethane (71 ppb) 1,1 dichloroethane (55 ppb), methylene chloride (1860 ppb) and barium (1400 ppb). The 1400 ppb value for barium exceeds New York State and Federal Drinking Water Standards (1000 ppb). The well in which this level of barium was discovered is located in the western portion of the site.

9. Groundwater serves as a potable water supply source for 6,500 residents within a three mile radius of the site. The Village of Oakfield public water supply wells are located approximately one mile northwest of the site.

10. The presence of hazardous substances at the facility, and their potential migration to surrounding soils, groundwater and surface water, constitutes a threatened release within the meaning of Section 101(22) of CERCLA, 42 U.S.C. §9601(22).

11. By consenting to this Order, Respondent does not concede the correctness of any fact alleged herein or any determination expressed herein. This Order shall not be construed in any way as an admission of any fact or liability by Respondent.

DETERMINATION BY THE REGIONAL ADMINISTRATOR

Based on the foregoing information, the Regional Administrator has determined that a substantial threat of release of hazardous substances from the facility may present an imminent and substantial endangerment to the public health or welfare or the environment. The Regional Administrator has also determined that, in order to protect public health and welfare and the environment, a remedial investigation must be undertaken to 1) determine the full nature and extent of on-site and off-site contamination, if any, and 2) form the basis for evaluating the appropriate remedial measures, pursuant to 40 CFR §300.68(a)-(j) (1983).

ORDER

Based on the foregoing it is hereby Ordered and Agreed that the Respondent shall undertake remedial action at the facility in compliance with the following schedule:

I. REMEDIAL INVESTIGATION

A. Within thirty (30) days of the effective date of this Order, Respondent shall submit to EPA for review, a detailed workplan and implementation schedule for a Remedial Investigation in conformance with the National Oil and Hazardous Substances

Contingency Plan (NCP), in particular, 40 CFR §300.68(a)(j) (1983). This detailed work plan shall be designed and implemented pursuant to the REMEDIAL INVESTIGATION SCOPE OF WORK, found at Attachment 1 of this ORDER, which is incorporated herein by reference. This detailed workplan and remedial investigation shall be designed to fully define the nature and extent of contamination that constitutes a release and/or threatened release, and shall provide for at least the following:

1. hydrogeologic setting of the site, including a complete characterization of soils and lithologies;

2. determination of hydraulic gradients and direction of groundwater flow graphically displayed by a groundwater contour map of the area;

3. location and influence of pumping wells (public and private) on groundwater movement and the use of water taken from such wells;

4. surface investigation of industrial waste disposal areas and EPA records of responses to inquiries under RCRA to determine the aerial extent and depth of contaminated material, waste characteristics (physical and chemical), waste concentrations, and relationships to groundwater and surface water;

5. sampling and analysis of leachate streams, surface water, sediments, and EPA installed monitoring wells at locations identified in Attachment 2. All samples shall be obtained and analyzed for priority pollutants and barium in accordance with established EPA sampling, analytical, chain of custody and quality assurance procedures; and

6. health and safety plan for conducting the remedial investigation.

B. EPA will review the detailed workplan submitted in accordance with Paragraph I(A), above, and shall provide comments to Respondent's designated coordinator.

C. Within fifteen (15) days of receipt of EPA comments on the detailed workplan, Respondent shall modify the detailed workplan, as necessary, to conform with said comments and submit the modified detailed workplan to EPA.

D. EPA will approve the modified detailed workplan called for in Paragraph I(C), above, if EPA finds it to be responsive to EPA's comments provided pursuant to Paragraph I(B), above. Otherwise, EPA will modify said workplan to conform to the comments provided pursuant to Paragraph I(B), above, and it will become the approved detailed workplan.

E. Within 90 days of receipt of EPA approval of the detailed workplan, Respondent shall complete those activities specified therein and shall submit to EPA for review and approval, a report detailing the results of the remedial investigation, ("Remedial Investigation Report").

F. EPA shall review the Remedial Investigation Report, submitted by the Respondent pursuant to Paragraph I(E) above, and provide comments to the Respondent.

G. Within 30 days of receipt of EPA comments on the Remedial Investigation Report, Respondents shall modify the report as necessary to conform with such comments and submit the modified report to EPA for approval, and/or shall initiate such additional investigations as may be found necessary by EPA in accordance with a schedule to be established by EPA.

II. FEASIBILITY STUDY

A. Within 45 days of EPA approval of the Remedial Investigation Report, Respondent shall submit to EPA for review, a detailed work plan for the preparation of a study of feasible remedial alternatives ("feasibility study"), based on data obtained under the procedures outlined in Section I., above and pursuant to the FEASIBILITY STUDY AND SCOPE OF WORK, found at Attachment 3 of this ORDER, which is incorporated herein by reference. Said work plan shall be drafted pursuant to the specifications of any then existing EPA guidance on preparation of scopes of work for feasibility studies. Accordingly, said feasibility study must satisfy the requirements of Paragraph II(F), below and address the following remedial alternatives:

1. Initial Remedial Measures

2. Source control

3. Off-site remedial measures

4. No action alternative (if appropriate)

B. EPA shall review the scope of work called for in Paragraph II(A) above, and provide comments to the Respondent.

C. Within 15 days of receipt of EPA's comments, Respondent shall modify the detailed scope of work as necessary to conform with such comments and submit the modified scope of work to EPA.

D. EPA shall approve the modified scope of work called for in Paragraph II(C), above, if EPA finds it to be responsive to EPA's comments made pursuant to Paragraph II(B), above. Otherwise, EPA will modify said scope of work to conform to the comments provided pursuant to II(B), above, and it will become the approved scope of work.

E. Within 120 days of receipt of EPA approval of the scope of work (or the approved scope of work) Respondent shall complete those activities specified in the scope of work. Respondent shall submit to EPA for review and approval a feasibility study report, including such recommended remedial action.

F. The feasibility study will evaluate remedial measures for mitigating the release of hazardous substances from the site, as identified pursuant to Section I., above. In addition, the detailed scope of work and the feasibility study shall conform to the requirements of 40 CFR §300.68(a)-(j) (1983).

G. EPA will review the report submitted pursuant to Paragraph II(E) above, and provide comments to the Respondent. The criteria set forth in Paragraph II(F), above, will form the basis for EPA's evaluation.

H. Within 15 days of receipt of EPA comments on the feasibility study report, which shall include EPA's determination of the appropriate remedy, Respondent shall modify that report as may be necessary to conform with such comments and submit the modified report to EPA for approval, and/or shall initiate such additional engineering evaluations as EPA finds necessary, in accordance with a schedule set forth by EPA.

III. REPORTING QUALITY ASSURANCE AND SAMPLING

A. All actions performed by Respondent in implementing this ORDER shall be in compliance with all applicable laws and regulations, including but not limited to 40 CFR §300.68 (1983). Moreover, except as otherwise directed by EPA, Respondent shall submit a Quality Control/Quality Assurance and Chain of Custody Workplan using the methodologies as set forth in Sections 10 and 1.3, respectively, of the EPA publication entitled, "Test Methods for Evaluating Solid Waste" (SW-846)., and "Guidance for Preparation of Combined Work/Quality Assurance Project Plans for Water Monitoring." Respondent shall consult with the EPA Project Officer, designated in Paragraph III(E), below, in conducting these activities.

B. Upon request by EPA, Respondent shall provide the EPA On-Scene Coordinator or its designated representatives, as defined in Paragraph IV(B), of this ORDER, with duplicate and/or split samples of any samples collected in furtherance of work performed in accordance with this ORDER.

C. All data and information, including raw sampling and monitoring data, generated pursuant to this ORDER by Respondent or on behalf of Respondent, shall be made available by Respondent to EPA or its designated representative, and shall be preserved for six years.

D. All records produced by Respondent and delivered to EPA in the course of implementing this ORDER shall be available to the public unless identified as confidential by Respondent in conformance with 40 CFR Part 2 and, in the case of NYSDEC, applicable New York law. Records so identified shall be treated as confidential only in accordance with the applicable confidentiality regulations. No sampling and monitoring data or hydrological or geological information shall be considered confidential.

E. All correspondence, reports, work plans and other writings required under the terms of this ORDER to be submitted to EPA shall be sent by certified mail, return receipt requested, to the following addressees:

Raymond Basso, Project Officer
Hazardous Waste Site Branch
Office of Emergency and Remedial Response
U.S. Environmental Protection Agency
Room 402
26 Federal Plaza
New York, New York 10278

A copy of each such submittal shall be sent to NYSDEC at the following address:

Norman Nosenchuck
Director, Division of Solid
and Hazardous Waste
New York State Department of
Environmental Conservation
50 Wolf Road
Albany, New York 12233

IV. FACILITY COORDINATOR AND ON-SCENE COORDINATOR

A. Respondent shall, within fifteen (15) days of the effective date of this ORDER, appoint a Facility Coordinator who shall be responsible for oversight of the implementation of this ORDER and the activities required herein. All reports, comments, and other correspondence directed to the Respondent will be made available to this Facility Coordinator.

B. EPA will appoint an On-Scene Coordinator. This coordinator will be EPA's designated representative at the site, and he/she and his/her designated representatives will have the right to move freely about the site at all times when work is being carried out pursuant to this ORDER and the authority of 40 CFR §300.68 (1983).

C. Respondent and EPA each have the right, respectively, to change their Facility Coordinator or On-Scene Coordinator at any time. Such change shall be accomplished by notifying the other party in writing at least five working days prior to the change.

V. REIMBURSEMENT

A. During January, 1984, the EPA Field Investigation Team installed and developed eleven monitoring wells to determine the nature and extent of on-site and off-site contamination and the potential contamination of adjacent public and private water supply wells, at a cost of $42,973.

B. Within thirty (30) days of the effective date of this ORDER, Respondent shall reimburse the United States for the amount of $42,973, for costs incurred in the initiation of the remedial action necessary at this site, in the form of a certified check made payable to the "Hazardous Substance Resource Trust Fund," pursuant to Section 107 of CERCLA, 42 U.S.C. §9607.

VI. GENERAL PROVISIONS

A. All reports, work plans and other writings required under the terms of this ORDER, upon approval by EPA, are incorporated into this ORDER.

B. All decisions of EPA under this ORDER, including but not limited to approvals, disapprovals, and requests for modifications of reports, work plans, specifications, schedules, and other work outputs, will be communicated in writing by Raymond Basso, Project Officer, Hazardous Waste Site Branch, U.S. Environmental Protection Agency, 26 Federal Plaza, New York, New York 10278, or his designated representative.

C. No informal advice, guidance, suggestions or comments by EPA or DEC regarding reports, plans, specifications, schedules or any other writing submitted by Respondent shall be construed as relieving Respondent of its obligation to obtain such formal approvals as may be required herein.

D. Neither the United States Government nor any agency thereof shall be liable for any injuries or damages to persons or property resulting from acts or omissions of Respondent, its officers, directors, employees, agents, servants, receivers, trustees, successors, or assigns, or of any persons, including but not limited to firms, corporations, subsidiaries, contractors or consultants, in carrying out activities pursuant to this ORDER, nor shall the United States Government or any agency thereof be held as a party to any contract entered into by Respondent in carrying out activities pursuant to this ORDER.

E. This ORDER shall apply to and be binding upon Respondent and Respondent's officers, directors, employees, agents, servants, receivers, trustees, successors, and assignees, and upon all persons, including but not limited to firms, corporations, subsidiaries, contractors, and consultants, acting under or for Respondent to the extent provided under existing law.

F. Nothing contained in this ORDER shall affect any right, claim, interest, defense, or cause of action of any party hereto with respect to third parties.

G. Any delay of performance which is caused by circumstances beyond the control of Respondent (force majeure) shall not be a breach or violation of this ORDER. Respondent shall use its best efforts to avoid or minimize any delay or prevention of performance of its obligations under this ORDER. The time for performance of any activity delayed by circumstances beyond the control of Respondent may be extended by a period of time not longer than that which can reasonably be attributed to such circumstances. Increased costs or expenses associated with the implementation of the activities called for in this ORDER shall not be considered a circumstance beyond the control of Respondent. In the event that there is a dispute as to whether or not any delay results from circumstances beyond the control of Respondent, the burden of proof shall lie with the Respondent. Respondent shall notify EPA's Project Officer of such circumstances, or of Respondent's belief that such circumstances may occur, as soon as possible, but not later than 10 days after the date when Respondent knew or should have known of the occurrence of such circumstances, and not later than 10 days after the date of belief that such circumstances may occur. Such written notification shall be accompanied by all available documentation, including but not limited to third party correspondence, and an affidavit from a responsible corporate official specifying each of the circumstances, Respondent's rationale for interpreting such circumstances as beyond its control, the actions that Respondent has taken and/or plan to take to perform the affected activity or activities or to perform them on time, and Respondent's prediction as to the length of time that the circumstances that constitute the force majeure will delay the affected activity or activities.

VII. ENFORCEMENT ACTION AND EFFECTIVE DATE

A. In the event that Respondent fails to adhere to any requirement of this ORDER; or, notwithstanding compliance with the terms of this ORDER, upon the occurrence or discovery of a situation as to which EPA would be empowered to take any further

response action, including but not limited to immediate removal, planned removal, and/or interim remedial action; or in the event of a release or threatened release not addressed by this ORDER; or upon the determination that any action beyond the terms of this ORDER is necessary to abate an imminent and substantial endangerment to the public health or welfare or the environment that may be posed by this facility; or under any other circumstances authorized by law and not inconsistent with terms of this ORDER, EPA may institute federally-funded response activities and subsequently pursue cost recovery actions available, and/or EPA may issue orders to Respondent pursuant to available statutory authority.

B. EPA reserves the right to bring an action against Respondent pursuant to Section 107 of CERCLA for recovery of its costs incurred in oversight of Respondent's implementation of this ORDER, and any other past and future costs incurred by EPA in connection with its response activities pursuant to CERCLA at the site.

C. Respondent is advised that willful violation or failure or refusal to comply with this ORDER, or any portion thereof, may subject it to a civil penalty of not more than $5,000 for each day in which violations occur or such failure to comply continues. Failure to comply with this ORDER, or any portion hereof, without sufficient cause, may also subject Respondent to liability for punitive damages in the amount of three times the total of all costs incurred by the government as a result of Respondent's failure to take proper action.

D. Respondent agrees, for purposes of this Order only, not to contest the authority or jurisdiction of the Regional Administrator to issue this ORDER, and also agrees for purposes of this Order or its enforcement, only, not to contest the existence of the statutory prerequisites necessary for the Regional Administrator's issuance of this ORDER.

VIII DISPUTE RESOLUTION CLAUSE

All decisions of EPA under this ORDER, whether approval, disapproval, or modification of reports, plans, specifications, implementation schedules, or work efforts shall be presumed to be valid. If Respondent has objections to any EPA decision made pursuant to this ORDER, Respondent shall notify EPA in writing of the objections within 21 days of notice of EPA's decision. The parties shall then have an additional 21 days from the receipt

by EPA of the notification of objection to reach agreement. If agreement cannot be reached on any issue(s) within this 21 day period, the dispute shall be resolved in favor of EPA for the sole purpose of establishing a Final Agency Action subject to judicial review. Company shall have the right to seek judicial review of the Final Agency Action. In any such review, Respondent shall have the burden of petitioning the court for modification of the decision(s) of EPA. Judicial review shall be limited to those issues which were not reconciled by agreement of Respondent and EPA.

Entered this day of , 1984 with the agreement and consent of the parties.

U.S. ENVIRONMENTAL PROTECTION AGENCY

RICHARD T. DEWLING
Acting Regional Administrator
U.S. Environmental Protection Agency
Region II

8-9-84
DATE

NL INDUSTRIES, INC.

Name: FRED W. MONTANARI

7-30-84
DATE

Title:

EXEC V.P.

REMEDIAL INVESTIGATION
SCOPE OF WORK

PURPOSE:

The purpose of this remedial investigation is to determine the nature and extent of the problem at the site and gather all necessary data to support the feasibility study. The Respondent shall furnish all personnel, materials, and services necessary for or incidental to performing the remedial investigation at the Town of Batavia Landfill.

SCOPE:

The remedial investigation consists of seven tasks:

Task 1 -- Description of Current Situation

Task 2 -- Investigation Support

Task 3 -- Site Investigations

Task 4 -- Site Investigations Analysis

Task 5 -- Final Report

Task 6 -- Additional Requirements

A detailed work plan, shall be submitted by the Respondent for the proposed remedial investigation.

TASK 1 -- DESCRIPTION OF CURRENT SITUATION

The Respondent shall describe the background information pertinent to the site and its problems and outline the purpose and need for remedial investigation at the site. The data gathered during any previous investigations or inspections and other relevant data should be used.

a. Site background. Prepare a summary of the regional location, pertinent area boundary features, and general site physiography, hydrology, and geology. The total area of the site and the general nature of the problem, including pertinent history relative to the use of site for hazardous waste disposal, should be defined.

b. Nature and Extent of Problem. Prepare a summary of the actual and potential on-site and off-site health and environmental effects. This may include, but is not limited to, the type, physical states, and amounts of the hazardous substances, the existence and conditions of drums, lagoons, affected media and pathways of exposure, contaminated releases such as leachate or runoffs, and any human exposure. Emphasis should be placed on describing the threat or potential threat to public health. Describe any reports of human or animal related illnesses that may be related to the site.

c. History of Response Actions. Prepare a summary of any previous response actions conducted by either local, State, Federal or private parties, including the site inspection, other technical reports, and their results. This summary should address any activities undertaken to identify responsible parties, compel private cleanup, and recover costs. A list of reference documents and their location shall be included. The scope of the RI/FS should be developed to address the problems and questions that have resulted from the previous work at the site.

TASK 2 -- INVESTIGATION SUPPORT

The Respondent shall conduct preliminary work necessary to conduct the site investigations and feasibility study.

a. Site Visit. Secure site access from appropriate officials (e.g. Town Board, Town attorney etc.) for both the remedial investigation and feasibility study. Conduct initial site visits required to become familiar with site topography, access routes, and proximity of receptors to possible contamination, and collect data for preparation of the site safety plan. The visit should be used to verify the site information developed in Task 1.

b. Define Boundary Conditions. Establish site boundary conditions to limit the area of site investigations. The boundary conditions should be set so that subsequent investigations will cover the contaminated media in sufficient detail to support following activities (e.g., the feasibility study). The boundary conditions may also be used to identify boundaries for site access control and site security. [If not in existence, a fence or other security measures may be considered as an initial remedial measure.]

c. Site Map. Prepare a site map showing all wetlands, water features, drainage patterns, tanks, buildings, utilities, paved areas, easements, right-of-ways, and other features. The site map and all topographic surveys shall be of sufficient detail and accuracy to locate and report all existing and future work performed at the site. [Permanent baseline monument, bench marks, and reference grid tied into any existing reference system (i.e., State or USGS) should be considered as an option.]

d. Site Office. If agreed to by EPA and the site owner, establish a temporary site office to support site work.

TASK 3 -- SITE INVESTIGATIONS

The Respondent shall conduct only those site remedial investigations necessary to characterize the site and its actual or potential hazard to public health and the environment.

The site investigations should also result in data of adequate technical content to assess preliminary remedial alternatives developed in Task 4 and support the detailed evaluation of alternatives during the feasibility study.

All sample analyses will be conducted at laboratories following EPA protocols, or equivalents. Strict chain-of-custody procedures will be followed and all samples will be located on the site map [and grid system] established under Task 2.

a. Waste Characterization. Develop and conduct a complete sampling and analysis program to characterize all materials of interest at the site. These materials could include wastes stored above or below ground in tanks, drums, lagoons, piles or other methods of storage. A sampling plan will be developed showing the locations, quantity, frequency, numbering, and constituents for analysis for each sample.

   The sampling plan shall describe the sampling and analysis techniques appropriate to the site conditions. The techniques may include tank and drum opening, sample packing and shipping, and sample preservation. The number or frequency of sampling to obtain representative data should also be discussed. Elements of the safety plan and the QA/QC plan described in the "Additional Requirements" section will also apply to sampling.

b. Hydrogeologic Investigation. Develop and conduct a program to determine the present and potential extent of ground water contamination [and to evaluate the suitability of the site for on-site waste containment]. Efforts should begin with a survey of previous hydrogeologic studies and other existing data. The survey should address the degree of hazard, the mobility of pollutants considered (from Waste Characterization), the soils; attenuation capacity and mechanisms, discharge/recharge areas, regional flow direction and quality, and effects of any pumping alternatives described in Task 4. Such information may be available from the USGS, the Soil Conservation Service, and local well drillers. Subsequent to the survey of existing data, a sampling program should be developed to determine the horizontal and vertical distribution of contaminants and predict the long-term disposition of contaminants.

The sampling program should, at a minimum, evaluate factors affecting ground water performance, background levels of contamination, the type of well construction utilized (must be compatible with type of measurement taken), the number and location of wells, chain of custody and record of samples, and the ground water sampling method. Geophysical techniques should be considered for use in defining subsurface conditions and design of the sampling program.

c. Soils and Sediments Investigation. Develop and conduct a program to determine the location and extent of contamination of surface and subsurface soils and sediments. This process may overlap with certain aspects of the hydrogeologic study (e.g., characteristics of soil strata are relevant to both the transport of contaminants by ground water and to the location of contaminants in the soil; cores from ground water-monitoring wells may serve as soil samples). A survey of existing data on soils and sediments may be useful. A sampling program should be developed and conducted to determine the horizontal and vertical extent of contaminated soils and sediments. Information regarding local background levels, degree of hazard, location of samples, techniques utilized and methods of analysis should be included. The investigation should identify the locations and probable quantities of subsurface wastes, such as buried drums, through the use of appropriate geophysical methods.

d. Surface Water Investigation. Develop and conduct a program to determine the extent of contamination of surface water. This process may overlap with the soils and sediments investigation; data from stream or lake sediments sampled may be relevant to surface water flow quantity and quality may be a useful first step.

A sampling program should be developed and conducted, discussing the degree of hazard, including information on local background levels, location and frequency of samples, sampling techniques, and method of analysis.

e. Air Investigation. Develop and conduct a program to determine the extent of atmospheric contamination. The program should address the tendency of substances (identified through Waste Characterization) to enter the atmosphere, local wind patterns, and the degree of hazard. A sampling program should be developed and conducted, specifying location, timing, and frequency of samples, sampling techniques, and method of analysis.

TASK 4 -- SITE INVESTIGATIONS ANALYSIS

The Respondent shall prepare a thorough analysis and summary of all site investigations and their results. The objective of this task will be to ensure that the investigation data are sufficient in quality and quantity to support the feasibility study.

The results and data from all site investigations must be organized and presented logically so that the relationships between site investigations for each medium are apparent.

a. Data Analysis and Exposure Assessment

Analyze all site investigation data and develop a summary of the type and extent of contamination at the site. The summary should describe the quantities and concentration of a specific chemical at the site and ambient levels surrounding the site. Prepare an exposure assessment describing the number and location and types of nearby populations, activities and pathways that may result in an actual or potential threat to public health, welfare, or the environment, and a projection of chemical concentrations at the different points of exposure through each media pathway over the likely period of exposure.

The analysis should discuss the degree to which either source control or off-site measures are required to significantly mitigate the threat to public health, welfare, or the environment. If the results of the investigation indicate that no threat or potential threat exists, a recommendation to stop the remedial response should be made.

TASK 5 -- FINAL REPORT

The Respondent shall prepare a final report covering the remedial investigation phase and submit four copies to EPA. The report shall include the results of Task 1 through 4, and should include additional information in an appendix. The report shall be structured to enable the reader to cross-reference with ease.

TASK 6 -- ADDITIONAL REQUIREMENTS

a. Chain-of-Custody. Any field sampling collection and analyses conducted shall be documented in accordance with chain-of-custody procedures as provided by EPA.

b. Safety Plan. A safety plan will be developed to protect the health and safety of personnel involved in the remedial investigation. The plan will be consistent with: [1]

- Section 111(c)(6) of CERCLA
- EPA Order 1440.1 -- Respiratory Protection
- EPA Order 1440.3 -- Health and Safety Requirements for Employees Engaged in Field Activities
- EPA Occupational health and Safety Manual
- Other EPA guidance as provided
- State safety and health statutes
- Site conditions

c. Quality Assurance/Quality Control (QA/QC). The Respondent shall prepare and submit as part of the work plan a Quality Assurance Project Plan for the sampling, analysis, and data handling aspects of the remedial investigation. The plan shall be consistent with the requirements of EPA's Contract Laboratory Program. The plan shall address the following points:

1. QA Objectives for Measurement Data, in terms of precision, accuracy, completeness, representativeness, and comparability.
2. Sampling procedures.
3. Sample Custody.
4. Calibration Procedures, References, and Frequency.
5. Internal QC Checks and Frequency.
6. QA Performance Audits, System Audits, and Frequency.
7. QA Reports to Management.

[1] It should also be consistent with EPA Interim Standard Operating Safety Guide (September 1982) and with applicable OSHA standards.

8. Preventive Maintenance Procedures and Schedule.

9. Specific Procedures to be used to routinely assess data precision, representativeness, comparability, accuracy, and completeness of specific measurement parameters involved. This section will be required for all QA project plans.

10. Corrective Action.

ATTACHMENT 2

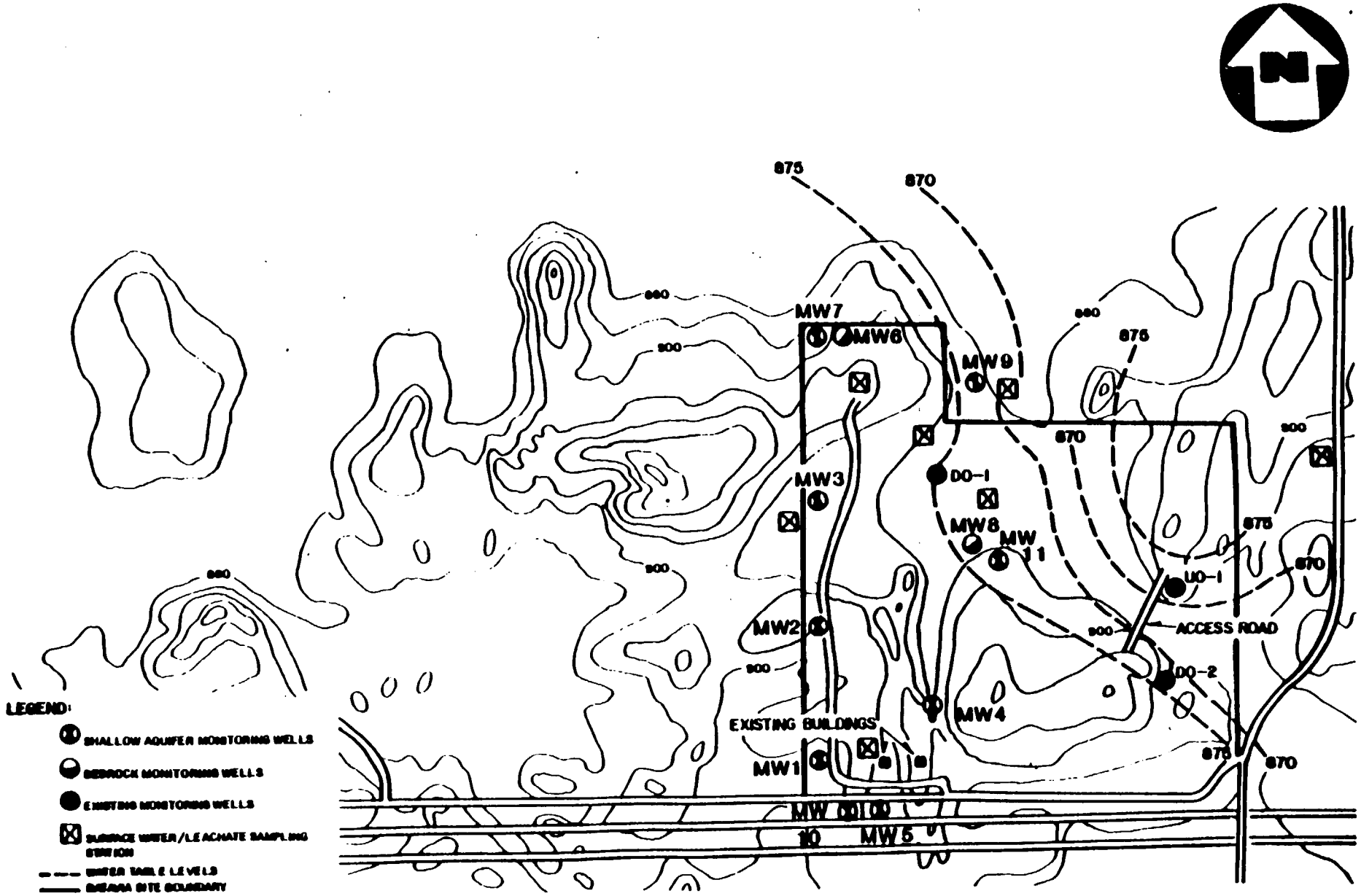

FIGURE 2

BATAVIA LANDFILL, BATAVIA, N.Y.

MONITORING WELL LOCATION MAP

(NOT TO SCALE)

NUS CORPORATION

A Halliburton Company

BAT 002 1417

FEASIBILITY STUDY
SCOPE OF WORK

PURPOSE

The purpose of this remedial action feasibility study is to develop and evaluate remedial alternatives, and to identify the cost-effective remedial action to be taken at the Town of Batavia Landfill. The Respondent shall furnish all necessary personnel, materials, and services required to prepare the remedial action feasibility study, except as otherwise specified herein. Nothing in this Scope of Work shall be read to contradict the actual terms of this Consent Order.

TASK 1. DESCRIPTION OF CURRENT SITUATION AND PROPOSED RESPONSE

Information on the site background, the nature and extent of the problem, and previous response activities presented in the remedial investigation may be incorporated by reference.

Following this summary of the current situation, a site-specific statement of purpose for the response, based on the results of the remedial investigation, should be presented. The statement of purpose should be organized in terms of components amenable to discrete remedial measures (e.g., a statement of purpose describing the evaluation of alternatives for treatment of contaminated ground water).

TASK 2. PRELIMINARY REMEDIAL TECHNOLOGIES

The Respondent will identify preliminary remedial technologies, providing detail sufficient to ensure that site investigations will develop a data base adequate for the evaluation of alternatives during the feasibility study.

a. Pre-Investigation Action. Prior to starting any site investigations, the Respondent will assess the site conditions to determine potential categories of source control [and/or off-site] remedial actions. Examples of questions to be answered are:

1. Source Control Action

i. What containment techniques appear feasible to prevent contamination of ground water?

ii. Does incineration or reclamation appear to be a viable option?

iii. Does on-site treatment appear to be a viable option, and if so, what category of treatment should be investigated (e.g., biological, physical, chemical, thermal)?

iv. Will substances migrate or continue to migrate off-site if no action is taken? If only source control measures are taken?

2. Off-Site Action

i. Does the apparent volume of contaminated ground water make investigation or treatment impracticable?

ii. What technologies are available to treat the identified contaminants at the site?

iii. What technologies exist to effectively remove off-site contaminated materials (e.g., river bottom sediments)?

iv. Will the off-site contamination continue to pose a threat if no action is taken?

The EPA will review and screen the preliminary technologies so that the site investigations can be designed to answer these types of questions and support the feasibility study.

b. Post-Investigation Evaluation. Either during or following the site investigations the Respondent will assess the investigation results and recommend preliminary remedial technologies likely to apply to the site problem. These technologies should be a refinement of the options considered in Task 2a. They will provide the basis for developing detailed alternatives and the cost-effectiveness analysis during the feasibility study. The work during the remedial investigation will generally be limited to the following:

1. Recommending types of remedial technologies appropriate to the site conditions.

2. Recommending whether or not to remove some or all of the waste for off-site treatment, storage, or disposal.

3. Determining the compatibility of groups of wastes with other wastes and with materials considered as part of the potential remedial action (e.g., slurry walls, lagoon liners). Recommending alternatives for treatment, storage, or disposal for each category of compatible waste.

TASK 3. DEVELOPMENT OF ALTERNATIVES

Based on the results of the remedial investigation and consideration of preliminary remedial technologies (Task 2), the Respondent shall develop a limited number of alternatives for source control or off-site remedial actions, or both, on the basis of objectives established for the response and the scoping decision.

a. Establishment of Remedial Objectives

Establishing site-specific objectives for the response. These objectives shall be based on public health and environmental concerns, information gathered during the remedial investigation, Section 300.68 of the National Contingency Plan (NCP), EPA interim guidance, and the requirements of any other applicable Federal statutes. Preliminary cleanup objectives shall be developed in consultation with EPA.

b. Identification of Remedial Alternatives

Develop alternatives to incorporate remedial technologies (from Task 2b), response objectives, and other appropriate considerations into a comprehensive, site-specific approach. Alternatives may include non-cleanup (e.g., alternative water supply, relocation) and no-action options. The alternatives shall be developed in close consultation with EPA.

TASK 4. INITIAL SCREENING OF ALTERNATIVES

The alternatives developed in Task 3 will be screened by the Respondent, EPA, and the State to eliminate alternatives that are clearly not feasible or appropriate, prior to undertaking detailed evaluations of the remaining alternatives.

Considerations to be Used in Initial Screening

Two broad considerations must be used as a basis for the initial screening: effects of the alternative and acceptable engineering practices. More specifically, the following factors must be considered:

1. Environmental effects. Alternatives posing significant adverse environmental effects will be excluded.

2. Environmental protection. Only those alternatives that satisfy the response objectives and contribute substantially to the protection of public health, welfare, or the environment shall be considered further. Source control alternatives shall achieve adequate control of source materials. Off-site alternatives shall minimize or mitigate the threat of harm to public health, welfare, or the environment.

3. Implementability and reliability. Alternatives that may prove extremely difficult to implement, will not achieve the remedial objectives in a reasonable time period, or rely on unproven technology will be eliminated.

TASK 5. EVALUATION OF THE ALTERNATIVES

The Respondent shall evaluate the alternative remedies that pass through the initial screening in Task 4 and recommend the most desirable alternative to EPA.

Alternative evaluation shall be preceded by a detailed development of the remaining alternatives.

a. Detailed Development of Remaining Alternatives

   1. Description of appropriate treatment and disposal technologies.

   2. Special engineering considerations required to implement the alternative (e.g., pilot treatment facility, additional studies needed to proceed with final remedial design).

   3. Environmental impacts and proposed methods, and costs, for mitigating any adverse effects.

   4. Operation, maintenance, and monitoring requirements of the remedy.

5. Off-site disposal needs and transportation plans.

6. Temporary storage requirements.

7. Safety requirements for remedial implementation (including both on-site and off-site health and safety considerations).

8. A description of how the alternatives could be phased into individual operable units. The description should include a discussion of how various operable units of the total remedy could be implemented individually or in groups, resulting in a significant improvement to the environment or savings in costs.

9. A description of how the alternative could be segmented into areas to allow implementation of differing phases of the alternative.

10. A review of any off-site facilities provided by the state to ensure compliance with applicable RCRA requirements, both current and proposed.

b. Environmental Assessment

Perform an Environmental Assessment (EA) for each alternative. The EA shall include, at a minimum, an evaluation of each alternative's environmental effects, an analysis of measures to mitigate adverse effects, physical or legal constraints, and compliance with CERCLA or other regulatory requirements.

Each alternative will be assessed in terms of the extent to which it will mitigate damage to, or protect, public health, welfare, and the environment, in comparison to the other remedial alternatives. The specific considerations to be used in the assessment will be different for source control alternatives and for off-site alternatives, as explained in EPA guidance. Consideration may be given to standards and criteria developed under Federal or State environmental and health statutes.

c. Cost Analysis

Evaluate the cost of each feasible remedial action alternative (and for each phase or segment of the alternative). The cost will be presented as a present worth cost and will include the total cost of implementing the alternative and the annual operating and maintenance cost. Both monetary costs and associated non-monetary costs will be included. A distribution of costs over time will be provided.

d. Evaluation and Recommendation of Cost-Effective Alternative

Alternatives shall be evaluated using technical, environmental, and economic criteria. At a minimum, the following areas will be used to evaluate alternatives:

1. Reliability. Alternatives that minimize or eliminate the potential for release of wastes into the environment will be considered more reliable than other alternatives. For example, recycling of waste and off-site incineration would be considered more reliable than land disposal. Institutional concerns such as management requirements can also be considered as reliability factors.

2. Implementability. The requirements of implementing the alternatives will be considered, including phasing alternatives into operable units and segmenting alternatives into project areas on the site. The requirements for permits, zoning restrictions, right of ways and public acceptance are also examples of factors to be considered.

3. Environmental Effects. Alternatives posing the least impact (or greatest improvement) on the environment will be favored.

4. Safety Requirements. On-site and off-site safety requirements during implementation of the alternatives should be considered. Alternatives with lower safety impact will be favored.

Recommend the alternative determined to be the most cost-effective. The recommendation must be justified by stating the relative advantages over other alter-

natives considered. Evaluative considerations shall be applied uniformly to each alternative. The lowest cost alternative that EPA determines is technologically feasible and reliable and that adequately protects (or mitigates damages to) public health, welfare, or the environment will be considered the cost-effective alternative.

e. Preliminary Report

Prepare a preliminary report presenting the results of Tasks 1 through 5 and the recommended remedial alternative. Submit four copies of the preliminary report to EPA.

TASK 6. CONCEPTUAL DESIGN

Prepare a conceptual design of the remedial alternative selected by EPA. The conceptual design shall include, but is not limited to, the engineering approach including implementation schedule, special segmenting requirements, institutional requirements, preliminary design criteria, preliminary site and facility layouts, budget cost estimate (including operation and maintenance costs), operating and maintenance requirements and duration, and an outline of the safety plan including cost impact on implementation. Any additional information required as the basis for the completion of the final remedial design will also be included. The Respondent may also be required to revise portions of the community relations plan to reflect the results of the conceptual design.

TASK 7. FINAL REPORT

Prepare a final report for submissions to EPA. The report shall include the results of Tasks 1 through 6, and should include any supplemental information in an appendix. Submit four copies to EPA.

United States Environmental Protection Agency

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26 Federal Plaza
New York, N.Y. 10007

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Puerto Rico
Virgin Islands

EPA News Release

84(69) Rich Cahill (212) 264-2515

FOR RELEASE: August 20, 1984

NL INDUSTRIES CONSENTS TO INVESTIGATE CLEANUP NEEDS AT BATAVIA LANDFILL, EPA SCHEDULES PUBLIC BRIEFING

NEW YORK -- The U.S. Environmental Protection Agency (EPA) and NL Industries, Inc. have signed a consent order for the investigation and study of cleanup alternatives at the Batavia Landfill, an active municipal landfill in Genesee County, New York. The site is on the National Superfund List.

The site also received industrial wastes in the past.

Under the order, NL will be responsible for determining the extent of contamination in and around the site and then conducting a feasibility study to recommend the best immmediate and long-term measures to address any potential hazards to health and the environment posed by the site. EPA will then select the final action to be taken at the site.

"Voluntary agreements of this type are an essential tool in our program to clean up suspected hazardous waste sites," said Acting EPA Regional Administrator Dr. Richard T. Dewling.

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"They allow us to concentrate the federal funds we have available on other sites where responsible parties cannot be identified, or are unable or unwilling to do the job themselves."

NL is not the only generator whose hazardous wastes were transported to the facility for disposal or treatment. EPA has identified other generators believed to be liable for cleanup costs at the site. They include the City and Town of Batavia; the Eaton Corporation of Cleveland; the Burroughs Corporation of Detroit; R.E. Chapin Manufacturing Works, Inc. of Batavia; and GTE Services Corporation of Stamford, Connecticut.

Responsible parties who refuse to enter voluntarily into this order with EPA are subject to future law suits by both NL Industries and EPA. EPA may file claims of up to three times the amount the federal government may spend at the site.

EPA has scheduled a public briefing to discuss the details of the order and to address any concerns of area residents. The briefing will start at 7 PM in the Batavia Town Hall on Tuesday, August 28th.

BACKGROUND

The Batavia Landfill is a 40-acre active municipal landfill site. Leachate (liquid seepage) has been observed entering the Galloway Swamp which is located immediately adjacent to the site. The impact on the groundwater is of concern, but has not been fully evaluated. Within three miles of the site, a population of approximately 6,500 depends upon groundwater for its drinking water supply.

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AUG 10 1984

William K. Bronner, Esq.
Office of General Counsel
NL Industries, Inc.
1230 Avenue of the Americas
New York, New York 10020

Re: Town of Batavia 5106 Order

Dear Mr. Bronner:

Pursuant to my telephone message to your office, NL's Order was signed by Dr. Dowling on August 9, 1984, making that its effective date. I have enclosed the Order for your files. Please note that all time periods begin running as of August 9. As a precaution, I must reiterate that EPA demands strict adherence to those negotiated time periods. If it becomes apparent that some of the time restrictions may be violated, please be sure to give Ray Basso ample notice so that alternate measures may be assessed. Stiff penalties may be assessed for your failure to do so.

Also, you may be interested to know that EPA has scheduled a public informational meeting to explain the effects of the Order, on August 28, 1984 at 7 p.m. in the Batavia Town Hall.

Please feel free to call if you have any further matters to discuss.

Enclosure

Sincerely yours,

Andrew L. Praschak
Assistant Regional Counsel
Waste & Toxic Substances Branch
Office of Regional Counsel

bcc: Hamid Saebfar, WH-527 (w/attachment)
Sharon Foote, WH-527 (w/attachment)
Rick Doone, Town Manager (w/attachment)
Frank Barber, LE-134S (w/attachment)
Ray Basso, 2AWM-HM (w/attachment)